F. B. Pye,

Reversible Latch,

No. 52,201. Patented Jan. 23, 1866.

Fig: 1.

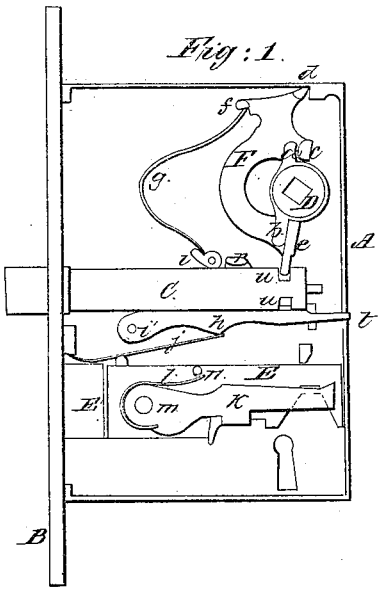


Fig: 8.

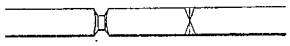


Fig: 4.

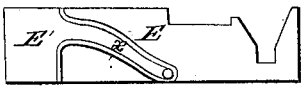


Fig: 3.

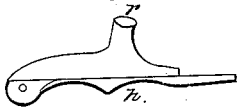


Fig: 2.

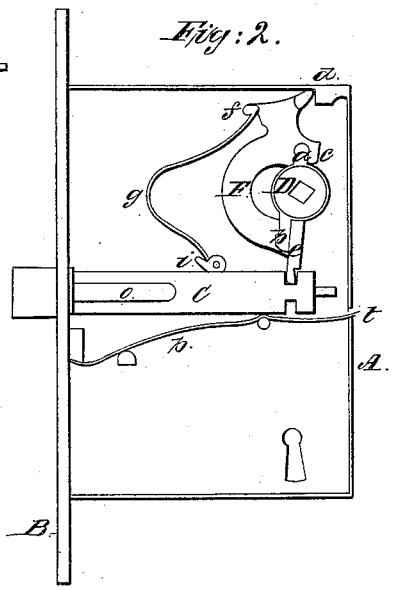
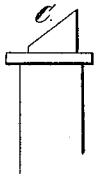


Fig: 5.

Fig: 6.



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UNITED STATES PATENT OFFICE.

FRANCIS B. PYE, OF TRENTON, NEW JERSEY.

IMPROVEMENT IN KNOB-LATCHES.

Specification forming part of Letters Patent No. **52,201**, dated January 23, 1866.

To all whom it may concern:

Be it known that I, FRANCIS B. PYE, of Trenton, in the county of Mercer and State of New Jersey, have invented certain new and useful Improvements in Door-Locks; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making part of this specification, in which—

Figure 1 is a side view of my improved lock with the plate removed. Fig. 2 is a similar view, showing a modification of the same, Figs. 3, 4, 5, 6, and 7 being views of portions detached.

My invention relates to that class of locks generally used on doors; and it consists in a novel construction of the latch and certain parts operating in connection therewith, for enabling the latch to be reversed without taking the lock apart, so as to convert it at will into a right or left hand lock.

It further consists in a novel construction and arrangement of the levers for operating the same, in a novel method of constructing the body of the latch whereby its strength is increased, and also in a novel method of constructing the lock-bolt.

To enable others skilled in the art to construct and use my improved lock, I will proceed to describe it.

A represents the case, usually made of cast-iron, to which the face-plate B is secured in any suitable manner.

D represents the hub through which the spindle passes, and which operates the lever F that moves the latch C. In ordinary locks this lever F is pivoted upon a pin or stud cast upon the plate A for that purpose, and passes behind the stud D, which necessitates making the case wider from front to rear, in order to get the necessary room for the lever F to occupy and move in. I construct the lever F in the form shown in Figs. 1 and 2, making the sharp point *d* its fulcrum, and curving it around in front of the hub D, with its opposite end, *e*, resting in a notch in the rear portion of latch C, as clearly shown in the drawings, a spring, *g*, inserted between the stationary stud *i* and the arm *f* of lever F, serving to keep the latch thrown forward. By this construction and arrangement of these parts I am enabled to make the case of less width, thus saving material and adapting the lock to doors having narrow stiles.

Upon the lever F is cast a stud, *c*, against which the short arm *a* of the hub presses when the hub is turned in one direction, while the long arm *b* presses against the projecting arm *e* of the lever F when the hub D is turned in the opposite direction. By having the lever F fulcrumed on the sharp edge or point *d*, I save much friction and make the latch work very smoothly and with ease. I then construct the piece *h*, the form of which is clearly shown in Fig. 3, and pivot it at *i'*, and lay the latch C in the recess in the face thereof, the stud *r* on the upper side and the raised portion on the lower side keeping the latch in place, the opposite end of *h* projecting through an opening at *t* in the rear edge of the case A, as shown in Fig. 1. A spring, *j*, presses against *h* and serves to hold it, with the latch C, up, so as to keep the end of arm *e* in the notch in the upper face of latch C.

When it is desired to reverse the latch C it is only necessary to press the end of *h* down, so as to release the latch from the arm *e*, when it can be drawn out at the front, turned over, and reinserted, the arm *e* engaging with a similar notch in the opposite side of latch C, as shown in Figs. 1 and 2. It will thus be seen that the latch can be reversed at any time without taking the lock apart and without the use of any tool whatever.

In Fig. 2 is shown a modification of this plan. Instead of the piece *h*, I use simply a spring, *p*, which presses against the latch C, to keep it in place and prevent the arm *e* from slipping out of the notch, the end of this spring *p* extending out through the opening *t*, so that by pressing it down the latch C can be released and reversed, as described; or, in lieu of these parts, a screw, *s*, may be inserted through the case, as shown in red in Fig. 2, which will serve to keep the latch C in place.

In order to give greater strength to the body of the bolts C, which are usually made of a thin flat piece, I corrugate them, as shown at *o* of Fig. 2, and in cross-section in Fig. 5.

In constructing locks in the ordinary manner the studs or pins *m* and *n* of bolt E are usually riveted in holes made to receive them. When thus constructed they frequently become loosened, and thus destroy the value of the lock. In order to remedy this difficulty, and at the same time give greater strength to the bolt E, I form holes in the latter, and placing it in the mold properly prepared, I then cast the head E′ thereon, permitting the molten metal to flow along a groove in the mold, so as to form the ridge *x* on the back of the bolt E, and at the same time run through the holes and form the pins or studs *m* and *n* on the opposite side of E. By this means I strengthen the bolt, and at the same time secure the pins *m* and *n*, so that they will never work loose or become deranged.

In locks having a night-latch it is frequently the case that burglars, by applying sufficient force to the knob, by means of a hand-vise or some similar instrument, are enabled to break the catch or latch that secures the bolt, and are then enabled to open the door by simply turning the knob. To prevent this I cut away a portion of the spindle, as shown at *y* of Fig. 8, so that the remaining portion of the spindle shall be so proportioned to the strength of the latch or catch that when force is applied to the former it shall break or yield before the latter does, and thereby prevent the door from being improperly opened.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The lever F, with its sharp point *d* of oscillation resting in an angle, as shown and described, and so constructed as to pass in front of the hub D instead of in rear of the same, as and for the purpose set forth.

2. The reversible latch-bolt C, arranged to operate in connection with the lever *h* and spring *j*, or their equivalents, as herein shown and described.

3. The spindle reduced, as shown at *y* of Fig. 8, for the purpose of causing it to yield instead of the interior portions of the lock, and thus prevent burglars or others from forcing open the lock by means of the knob or spindle.

4. A bolt for locks having its body corrugated, as shown in Figs. 2 and 5, for the purpose of making it strong and light.

5. Forming the lock-bolt by casting the head E′, with the ridge *x* and pins *m* and *n*, on the flat bar E, as herein shown and described.

FRANCIS B. PYE.

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